6. Reverb

Objectives

- Define **reverb** and **associated parameters** on the **reverb decay graph**
- Discuss **historical and current methods** of reverb production
- Consider how **reverb can be used creatively** in a mix

Skills Development

- Numeracy (interpreting data)

Key Words

Reverb
Live Room
Decay
RT60
Reflections
Anechoic Chamber
Echo Chamber
Plate Reverb
Spring Reverb
Digital Reverb
Convolution Reverb
Impulse Reflex
Reverse Reverb
Gated Reverb

6. Reverb

- Reverb is short for **reverberation**, and gives our brain information **about the space we are in**

- It results from **sound bouncing off surfaces around us**, and is like the echoes you hear when you make a sound in a place with **reflective surfaces**

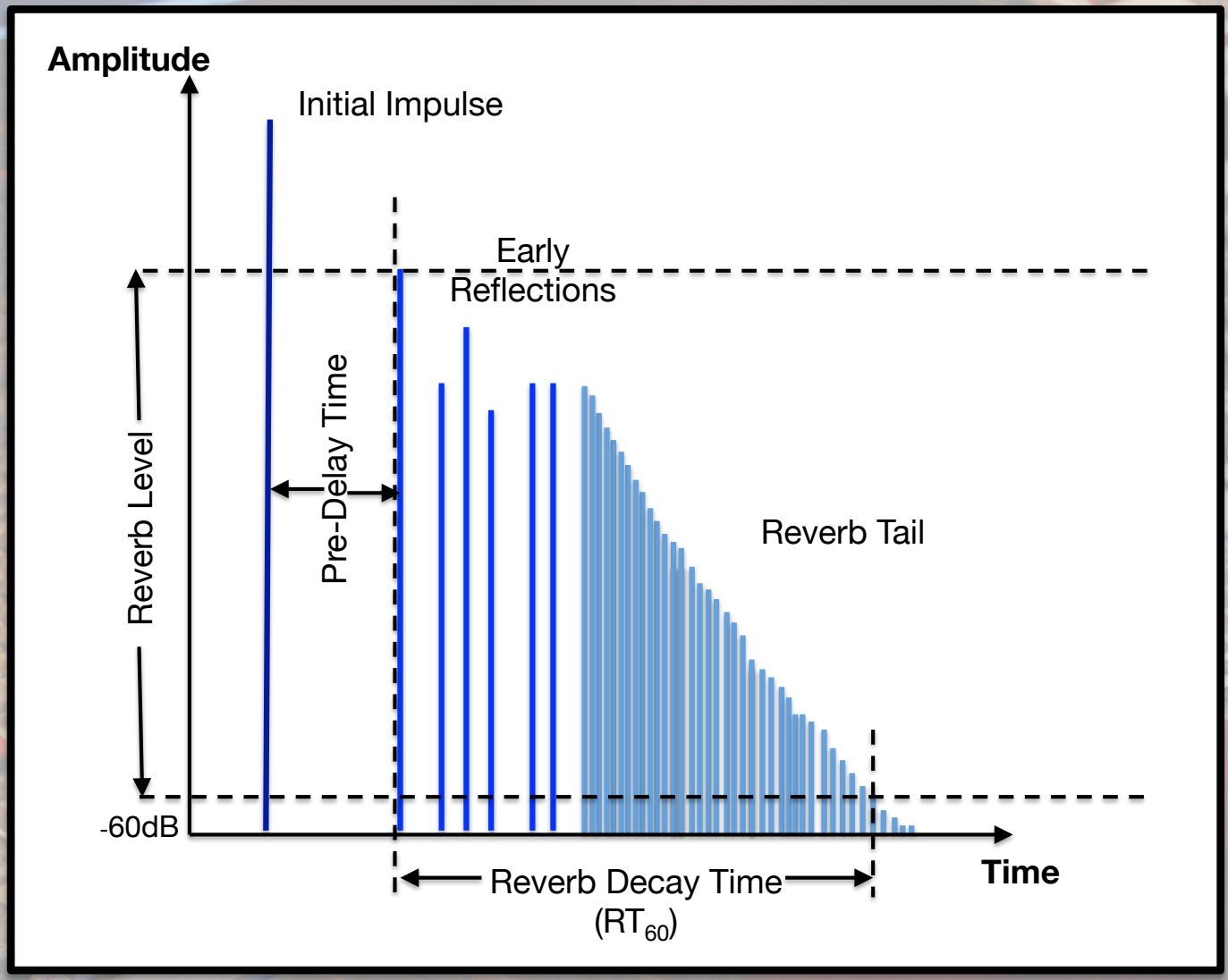
6. Reverb

- It is really useful in Music Technology because when we use **close mic recording techniques**, we aim to minimise the **natural reverb** we capture so we have control of the amount in the final mix.
- This means that we have to find ways of recreating it when we put a track together.
- An **anechoic chamber** is a space that is designed to have **no reverb.**

6. Reverb

An F16 Falcon in an Anechoic Chamber

Reverb Decay



6. Reverb

Echo Chambers

- Originally, reverb was created through a **variety of 'live rooms'** that had very different sounding reverb characteristics.
- This was **expensive**, and engineers soon found ways of **recreating these reverbs** in other forms in smaller rooms.
- One way was to find a **very reverberant room** and replay your mix on speakers in that room, using a pair **of omnidirectional microphones** to record the resulting echoes.
- Some studios used reverberant spaces they already had – for example the **office toilet**!

6. Reverb

Echo Chambers

6. Reverb

Plate and Spring Reverb

- Plate and spring reverb are both **methods of artificial reverb production** devised in the 1950s.
- Both used the **vibration of metal objects** to create the sound of reverb
- **Plate reverb** was often used in studios and avoided the need for an echo chamber.
- **Spring reverb** was often used in amplifiers; Fender was one of the first manufacturers to build spring reverb into their amps.

Plate and Spring Reverb

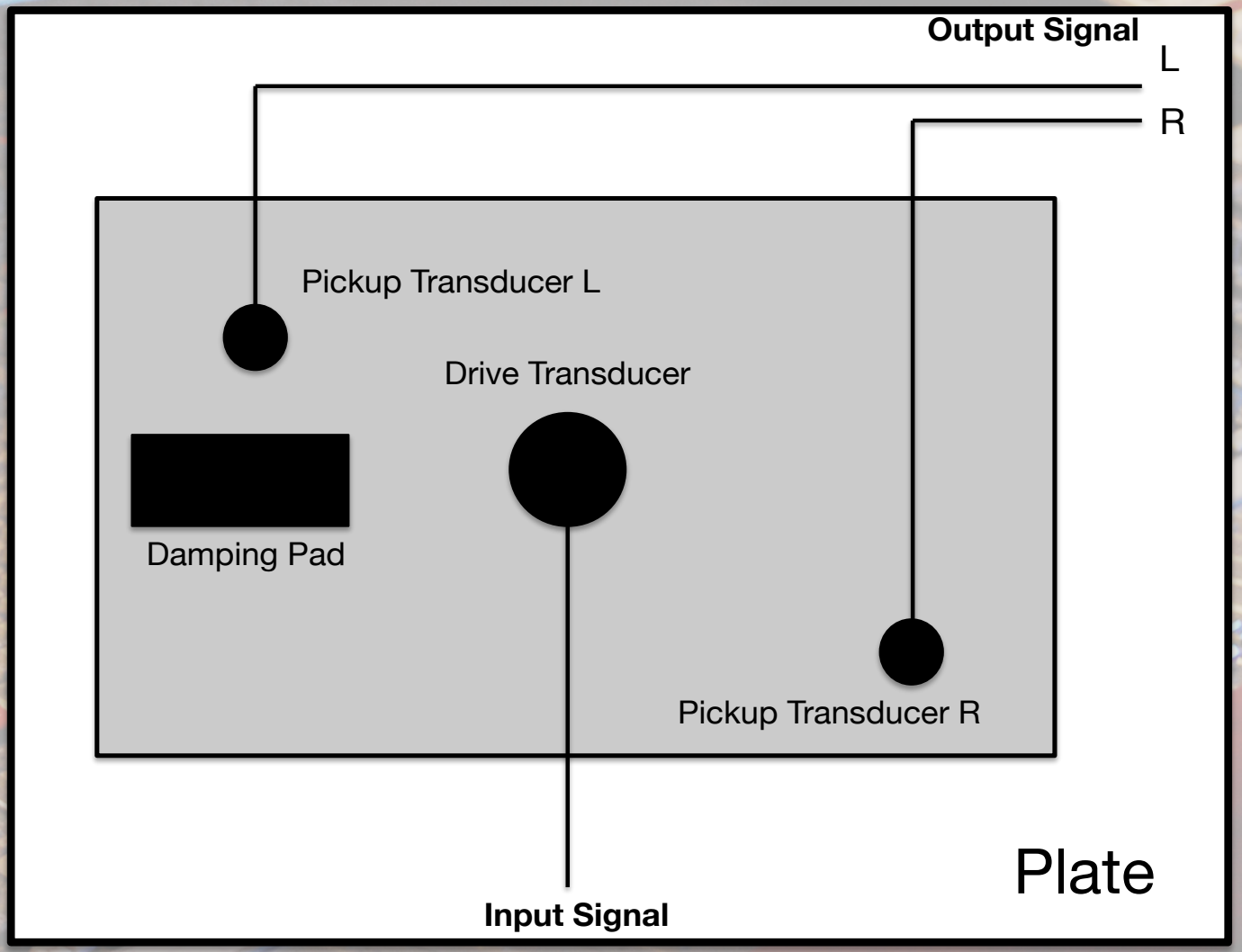
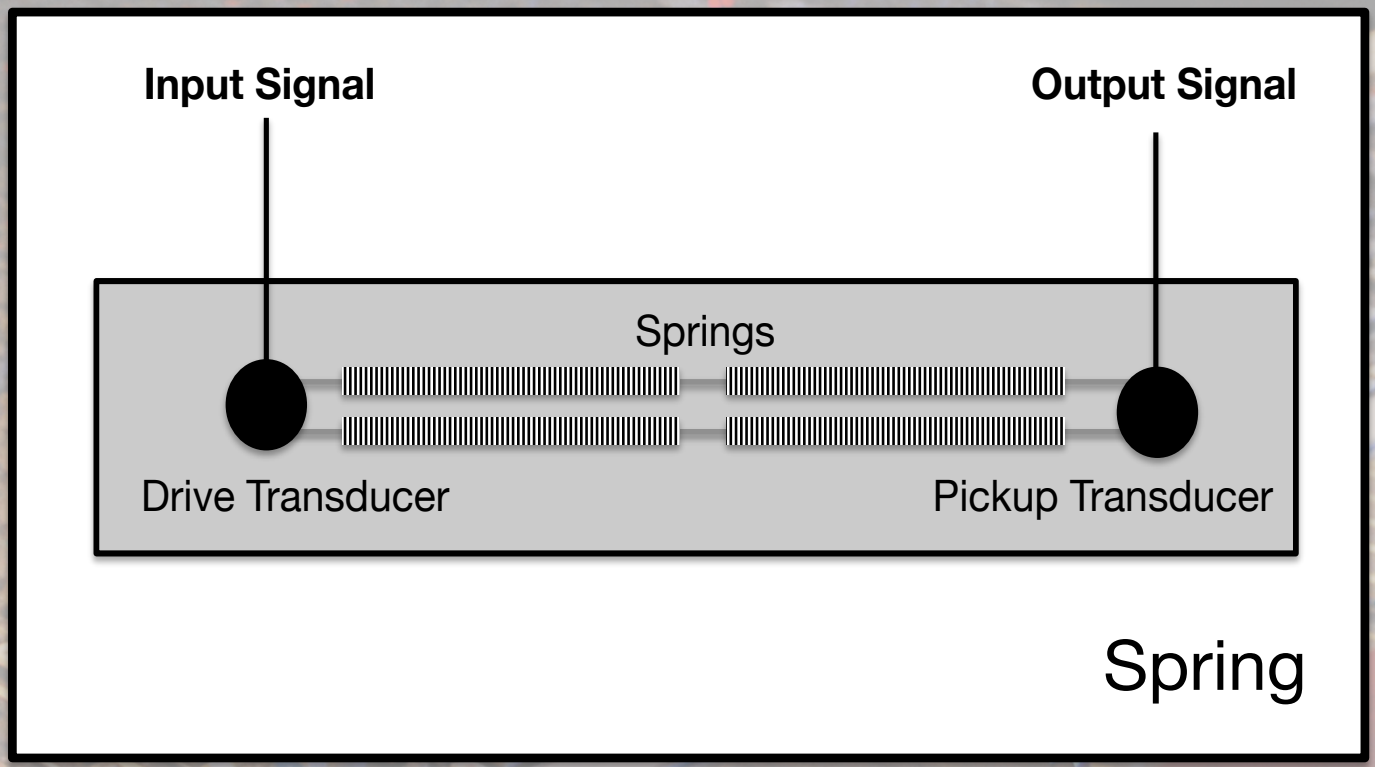


Plate and Spring Reverb



6. Reverb

Digital Reverb

- Digital reverb was **first seen in effect units** made by Yamaha and Lexicon in the 1980s
- It models a reverb by **using lots of delays**, which are **mathematically calculated**
- Digital reverbs enabled users and manufacturers to **store lots of presets**
- As computer processors got faster in the 1990s, digital reverb was incorporated as a **software plugin**

6. Reverb

Alesis NanoVerb

6. Reverb

Convolution Reverb

- Convolution reverb **reproduces a real reverb from a real space**, and was pioneered by **Sony** in **1996**
- An **impulse reflex** is generated in a space, and the response is recorded
- **Mathematical algorithms** subtract the impulse reflex from the reverb and this can then be **applied to other sounds**
- Convolution reverb is very **heavy on processor usage**

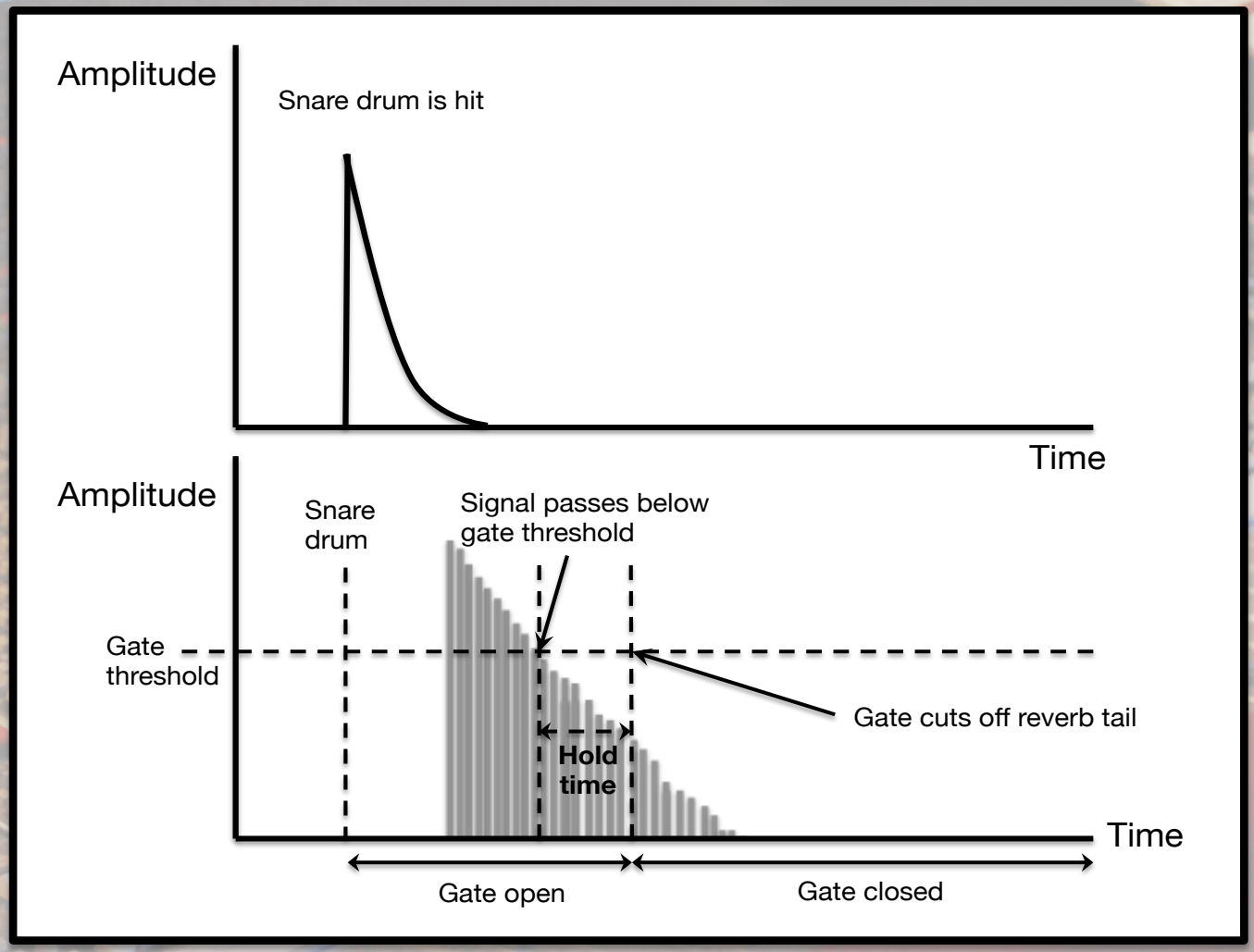
6. Reverb

Logic Space Designer

Other Types of Reverb

- **Reverse reverb** is created using a wet reverb signal played backwards.
- The original recording is then played forwards with the reverb which is first.
- In many styles of music, but particularly the 1980s, the **reverb decay was gated**, which meant that a very dense reverb could be used without causing ‘muddiness’ in the mix.
- **Gated reverb** is often used on snare drums and sometimes vocals.

Gated Reverb



Label the Convolution Reverb